DUAL OUTLET INLINE MASTER CYLINDERS

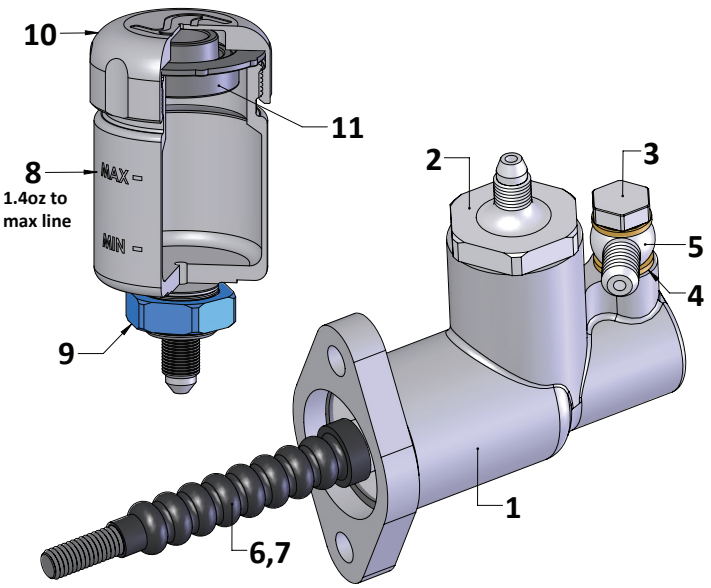
KIT #
B3362, B3362NR

APPLICATIONS
Vehicles with rear manual disc brakes

Kit Components for B3362 & B3362NR

ITEM#	PART#	QTY	DESCRIPTION
1	B3362A	1	0.777" bore Remote M.C Body
2	B3362Q	1	Top Fitting (Inlet port)
3	B3362S	1	Banjo Bolt
4	B3362T	1	Banjo Fitting (Outlet port)
5	B3362U*	2	Aluminum crush washer
6	B3362C	1	Pushrod
7	B3362I*	1	Pushrod Boot
8	B3350D[1]	1	Remote Reservoir
9	B3362W[1]	1	3/4"-16 Aluminum Nut
10	B3370E[1]	1	Reservoir Cap (O-ring groove removed 03/23)
11	B3370P[1]	1	Diaphram
-	B3370L	1	-125 Epdm O-ring (Need to be used in caps before 03/23)

*[1] Not included in B3362NR kit * Included in B3362R rebuild kit*



Plumbing

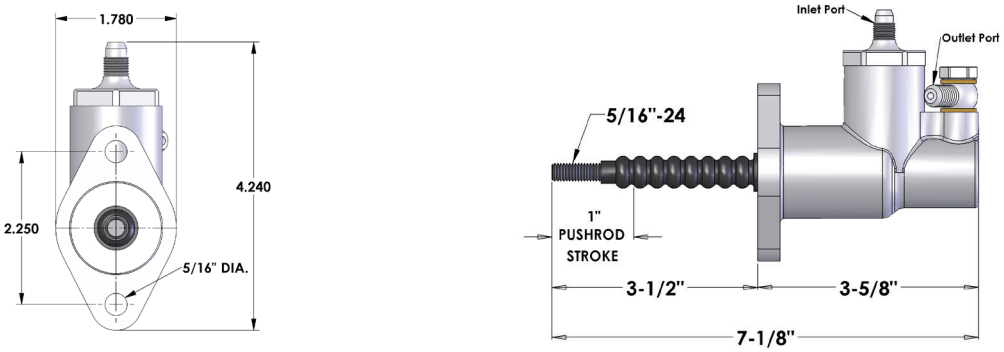
- Outlet port (4) is a -3 AN banjo fitting.
- The top fitting (2) and outlet on the reservoir (7) are –3 AN fittings.
- The M.C. reservoir (8) is to be plumbed to the top fitting (2).
- The banjo fitting (4) is to be plumbed to the rear brakes

Installation

- Before installation, the master cylinder MUST be bench bled. The majority of soft or spongy brakes results from not bleeding the master cylinder before it is installed. To properly bench bleed the Master:
  1. Connect the reservoir to the inlet port (2) on the master cylinder
  2. Run a brake line from the outlet port (4) of the master cylinder to the inside of the reservoir
  3. Fill the reservoir with DOT 4 or DOT 5.1 brake fluid until the end of the line is covered (1.4oz)
  4. Slowly cycle the pushrod in and out until the line is void of air bubbles
- Recommended handle ratio is 10 to 1
- Recommended pedal ratio is 5 to 1
- The reservoir must be mounted above the level of the brake calipers
- After installation of the master cylinder, the brake system must be bled. Use only DOT 4 or DOT 5.1 brake fluid.

Note: When bleeding the brake system the reservoir cap MUST be left loose or completely off to let air into the reservoir as the fluid goes down. If the cap is left off, place a rag over the reservoir, as fluid may shoot up from the tank.

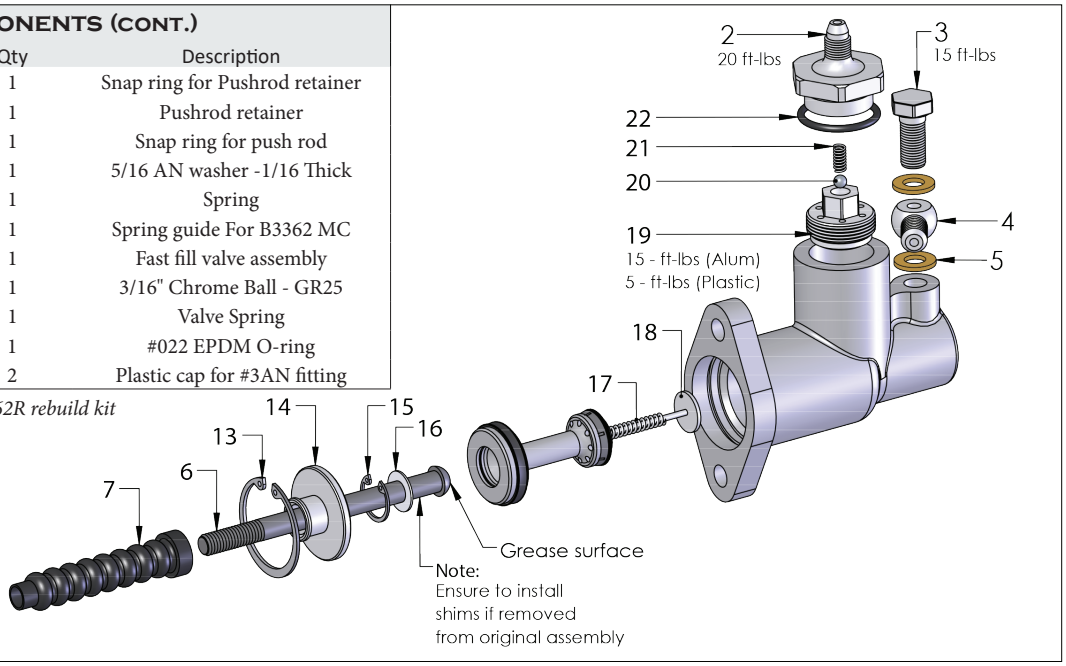
Figure # 1: B3362 & B3362NR Outer Dimensions



Kit Components (cont.)

Item #	Part #	Qty	Description
13	B3362L*	1	Snap ring for Pushrod retainer
14	B3362D	1	Pushrod retainer
15	B3364BS	1	Snap ring for push rod
16	B3362V	1	5/16 AN washer -1/16 Thick
17	B3362J*	1	Spring
18	B3362E	1	Spring guide For B3362 MC
19	B3362HAS	1	Fast fill valve assembly
20	Q1000C	1	3/16" Chrome Ball - GR25
21	B3362HB	1	Valve Spring
22	B3362N*	1	#022 EPDM O-ring
23	P2316	2	Plastic cap for #3AN fitting

** Included in B3362R rebuild kit*

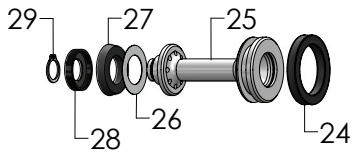


Disassembly

- The following is required:
  - Hydraulic brake assembly lubricant *(Raybesto part # BAF12 or similar)*
  - Grease
  - Internal and external retaining-ring pliers

1. The master cylinder should be hand stroked with all the ports facing away and into a container to remove as much of the remaining brake fluid out of the cylinder bores as possible.
2. Orient the unit in a vice with the push rod retainer (14) facing upward.
3. Remove the pushrod boot (7) and the snap ring (13) from master cylinder housing.
4. Pull out the pushrod (6) and push rod retainer (14) with the primary piston assembly.
5. Disassemble the pushrod (6) from the primary piston by removing the snap ring (15).
6. Remove the snap ring (29) from the piston assembly to allow disassembly of support cup (28) and cup seal (27).
   Inspect the master cylinder housing (1) and piston for excessive wear and replace if necessary.
   Note: If push rod shims were installed between the washer (16) and ushrod the shims must be reused.
   The shims limit the amount of pushrod play and are not required for all assemblies depending on the manufacture date of the pushrods.

Primary Piston Assembly



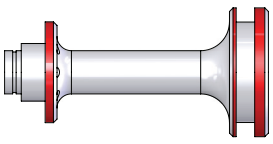
Kit Components (cont.)

ITEM#	PART#	QTY	DESCRIPTION
24	B3362O*	1	Quad Ring
25	B3362B	1	Primary Piston
26	B3362X	1	Backup Washer
27	B3362K*	1	20mm Cup Seal
28	B3362G	1	20mm Cup Seal Retainer
29	B3362M*	1	Snap Ring for Cup Seal Retainer

** Included in B3362R rebuild kit*

- Primary piston inspection:

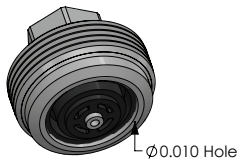
The primary piston needs to be inspected. The piston skirts and faces highlighted in red should be carefully inspected. If the push rod linkages are misaligned and the pushrod is being engaged at an angle, the piston is forced to rub against the master cylinder bore surfaces. This will result in shiny spots or in extreme cases deformation of the skirt towards the front of the piston. If there is evident damage of the piston skirts the master cylinder bore should be inspected. Furthermore, the brake linkages should be corrected so they're in line with the pushrod prior to master cylinder reinstallation.



- Master cylinder bore inspection:

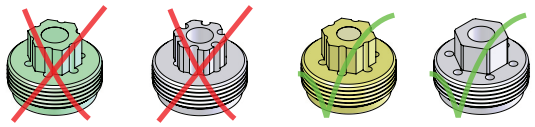
It's vital to inspect the master cylinder bores for wear, scoring and deposits. Discoloration or shiny spots in the bores are acceptable. Scoring should be felt by the finger. Generally, if the depth of a score catches the finger as it's glided across, the master cylinder body is not acceptable. Scotch brite can be used to gently scuff out any minor scores. Scores will cause fluid to seep past the cup seals and inadequate to no brake pressure to develop. If the master cylinder body is found to be unacceptable, please contact Strange Engineering. After inspection the master cylinder bores and body should be cleaned with brake cleaner and dried prior to reassembly.

Fast Fill Valve Inspection



Aluminum fast-fill valves must be inspected prior to reinstallation. A blow gun should be used to clear it of any grit or debris. The 0.010 diameter hole should be clear of any debris or blockage. A 0.010 diameter drill bit can be used to clean out any debris if a blow gun does not work.

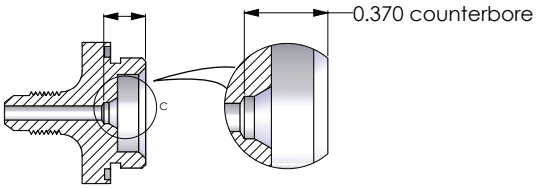
Note: do not reuse the indicated valves, only the yellow plastic and revised aluminum valves should be reused



ASSEMBLY

8. Discard the old cup seal and reinstall new cup seal making sure that the back-up washer gets placed back between the piston (25) and cup seal (27).
9. Install the cup seal retainer (28) and snap ring (29) back onto the piston (25).
10. Take off the old quad ring from the piston and gently install new quad ring (24).
11. Install the pushrod (6) into the piston using the washer (16) and snap ring (15).
12. Apply a small layer of lubricant or grease to the outside of the cup seal (27) and O-ring (24).
13. Install the new spring (17) and spring guide (18) into the piston assembly and slide the assembly into the master cylinder housing (1).
14. Reinstall the pushrod retainer (14), and the snap ring (13).
15. Now remove the banjo bolt (3) from the housing (1) and reinstall with the new crush washers (5) supplied in the kit. Torque it to 15 ft-lbs.
16. Ensure the inlet fitting (2) has a 0.370 deep counter bore as shown below. This is required for all applications using the aluminum fast-fill valve. If using the yellow plastic fast fill valve the counter-bore depth does not need to be checked.
17. The fast-fill valve (19) can be installed and torqued to 15 ft-lbs(5ft-lbs if plastic). Next, install the valve ball (20) followed by the spring(21) and the inlet fitting (2) with the O-ring (22). A small rod can be slid through the inlet fitting (2) hole to guide the spring (21) into position.
18. The master cylinder should be bench bled prior to installation. Follow the guidelines on page 1.

Inlet Fitting Inspection



Brake Fluid Breakdown

Due to temperatures experienced during drag racing, DOT 4, DOT 5.1 or a high performance glycol based brake fluid is recommended.

Brake systems are prone to moisture from humidity and regular use, therefore, moisture must be absorbed by the brake fluid instead of collected so the fluid does not easily boil.

DOT 5 (silicone based) is not recommended. It does not mix with other fluids. It is slightly compressible giving soft pedal/handle. It also does not absorb water. When moisture enters the system, it settles at the lowest point in which most cases is the caliper. At braking temperatures moisture can boil causing a loss or lack of pedal/handle.

Always perform a complete flush to the brake system when changing to a different brake fluid to avoid contamination.

Do not use brake fluid from open bottles or bottles stored for long periods as moisture may have been absorbed.

The dry boiling point is the temperature at which brake fluid will boil with no water (moisture) present in the system.

The wet boiling point is the temperature at which brake fluid will boil when 3% is water by volume of the system.

In race applications it's assumed brake fluid is changed often therefore moisture is not present and the dry boiling point can be a better reference when deciding on which fluid to use.

	Dry Boiling Point °F	Wet Boiling Point °F
DOT 3 Inexpensive, readily available, mixes with DOT 4 and DOT 5.1 Lowest boiling point, absorbs water, eats paint	**400**	**285**
DOT 4 Higher boiling point than DOT 3, absorbs water less readily than DOT 3 Absorbs water, eats paint	**445**	**310**
DOT 5 Does not eat paint, high boiling point Does not mix with water, difficult to bleed	**500**	**355**
DOT 5.1 High boiling point, mixes with DOT 3 & 4 Absorbs water, eats paint	**527**	**365**